Claims

1. An antiepileptic agent comprising a xanthine derivative represented by the formula (I):

$$\begin{array}{c} X^2 \quad R^3 \\ R^1\text{-}N \quad N \\ \quad\quad\quad\quad\text{-}R^4 \quad \textbf{(I)} \\ X^1 \quad N \quad N \\ \quad R^2 \end{array}$$
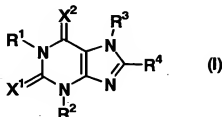
5 [wherein R^1, R^2 and R^3 are the same or different and each represents a hydrogen atom, lower alkyl, lower alkenyl or lower alkynyl;

R^4 represents cycloalkyl, $-(CH_2)_n-R^5$ (wherein R^5 represents substituted or unsubstituted aryl or substituted
10 or unsubstituted heterocyclic group and n represents an integer of 0 to 4) or the formula (II):
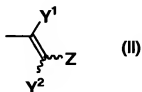
$$\begin{array}{c} Y^1 \\ \diagup \\ \quad\quad\text{~}Z \quad \textbf{(II)} \\ Y^2 \end{array}$$

(wherein Y^1 and Y^2 are the same or different and each represents a hydrogen atom, halogen or lower alkyl and Z represents
15 substituted or unsubstituted aryl or substituted or unsubstituted heterocyclic group); and

X^1 and X^2 are the same or different and each represents an oxygen atom or a sulfur atom] or a pharmaceutically acceptable salt thereof as an active ingredient.

20 2. The antiepileptic agent according to claim 1, wherein

23

X^1 and X^2 are oxygen atoms.

3. The antiepileptic agent according to claim 1 or 2, wherein R^4 is the formula (II):

$$Y^1 \diagdown \diagup Z \quad \text{(II)} \atop Y^2$$
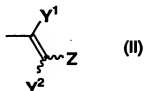
5 (wherein Y^1, Y^2 and Z have the same meanings as defined above, respectively).

4. The antiepileptic agent according to claim 3, wherein Y^1 and Y^2 are hydrogen atoms.

5. The antiepileptic agent according to claim 3 or 4,

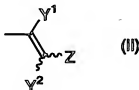10 wherein Z is substituted or unsubstituted aryl or the formula (III):

$$\diagdown \diagup \begin{array}{c} O \diagdown (CH_2)_m \\ O \end{array} \quad \text{(III)} \atop R^6$$
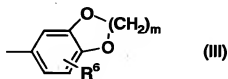
(wherein R^6 represents a hydrogen atom, hydroxy, lower alkyl, lower alkoxy, halogen, nitro or amino; and m represents an

15 integer of 1 to 3).

6. A method for treating epilepsy, which comprises administering an effective amount of a xanthine derivative represented by the formula (I):
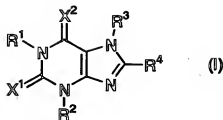
24

$$\text{(I)}$$

[wherein R^1, R^2 and R^3 are the same or different and each represents a hydrogen atom, lower alkyl, lower alkenyl or lower alkynyl;
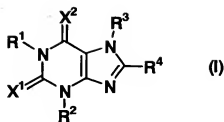
R^4 represents cycloalkyl, $-(CH_2)_n-R^5$ (wherein R^5 is substituted or unsubstituted aryl or substituted or unsubstituted heterocyclic group and n represents an integer of 0 to 4) or the formula (II):

$$\text{(II)}$$

(wherein Y^1 and Y^2 are the same or different and each represents a hydrogen atom, halogen or lower alkyl and Z represents substituted or unsubstituted aryl or substituted or unsubstituted heterocyclic group); and
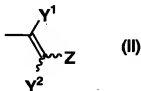
X^1 and X^2 are the same or different and each represents an oxygen atom or a sulfur atom] or a pharmaceutically acceptable salt thereof.

7. Use of a xanthine derivative represented by the formula (I):

$$\text{(I)}$$

[wherein R^1, R^2 and R^3 are the same or different and each represents a hydrogen atom, lower alkyl, lower alkenyl or lower alkynyl;

R^4 represents cycloalkyl, $-(CH_2)_n-R^5$ (wherein R^5 represents substituted or unsubstituted aryl or substituted or unsubstituted heterocyclic group and n represents an integer of 0 to 4) or the formula (II):

$$\text{(II)}$$

(wherein Y^1 and Y^2 are the same or different and each represents hydrogen atom, halogen or lower alkyl and Z represents substituted or unsubstituted aryl or substituted or unsubstituted heterocyclic group); and

X^1 and X^2 are the same or different and each represents an oxygen atom or a sulfur atom] or a pharmaceutically acceptable salt thereof, for the manufacture of an antiepileptic agent.